

Determining factors in student retention in online courses

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Abstract. The rapid growth of online education courses, especially Massive Open Online Courses (MOOCs), has called attention to the issue of student retention and low overall completion rates (Gaebel, 2013). The impact of different modes of delivery on retention has also received attention with a blended learning mode being deemed most effective in retaining students (Harker & Koutsantoni, 2005). Fischer (2007) underscores the need for computer-based tracking data to expose students' progress online. The study presented here is part of a larger study on student retention in online language learning courses and draws on tracking data from over 43,000 learners on 'Icelandic Online' (IOL), an open online course in Icelandic as a second language. Previous findings reveal that completion rates on IOL are low and vary by mode of delivery, revealing regular attrition patterns across all modes of delivery. This paper demonstrates the importance of re-examining parameters for measuring retention and to correlate student retention to views on course content and platform. Further surveys based on the tracking data will elicit more in-depth knowledge about student engagements.

Keywords: student retention, tracking data, self-reports, Icelandic Online.

1. Introduction

IOL offers seven courses in Icelandic as a second language for adults. The courses, developed at the University of Iceland, have been offered since 2004. These self-instructed online courses attract thousands of learners worldwide; providing the opportunity to learn Icelandic, unhindered by limits of geography. Two of the IOL courses (IOL 1 and 2) are offered in three delivery modes; as (1) an open and free, self-directed course, (2) a distance course, and (3) a blended course.

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The proliferation of MOOCs has called attention to the issue of student retention and concern about low overall completion rates (Gaebel, 2013). It has been pointed out that retention is commonly measured without accounting for student intentions (Koller, Ng, & Chen, 2013) and that no student is obliged to complete or engage in a MOOC (Sokolik, 2014).

Researchers have suggested that traditional approaches to measuring retention may not apply to MOOCs. The field of learning analytics have a significant role to play in providing valuable teaching and learning insights, and researchers (Long & Siemens, 2011) have called for more studies using this methodology on why students decide to leave online courses.

This paper presents an analysis of tracking data on student retention collected over eight years on 43,000 users of IOL. It also introduces a follow-up survey-based study, currently underway, which seeks to provide a more in-depth understanding of why students decide to stay on or leave online courses.

2. Method

This is a three phased, mixed method study. A tracking system is an integral part of IOL and monitors learners' engagement as they move through the course(s). The main objective of the first phase of the study is to analyse the large amount of tracking data by (1) mapping out overall retention rates for all the seven IOL courses, (2) exploring the effect of different modes on student retention, and (3) investigating what the overall engagement patterns on IOL suggest about the nature of retention.

The next two survey-based phases will gather evidence from self-reports from the same students on their use of the IOL programme as measured by the tracking data, with a view to investigate why online learners decide to leave, as well as stay, to the end of the programme. The focus is on learners on IOL 2 who have covered 40-100% of the course in the three different modes of delivery: blended, distance, and open. The survey includes a large number of factors associated with instructional features of the programme and different learning environments. The goal is to investigate (1) whether certain course content factors on IOL serve to encourage or discourage retention, (2) why the blended mode is more effective than other modes in retaining students, and (3) whether learners' intentions and motivations for taking the course are important factors in retention. Regression analysis is used to determine which variables affect retention.

3. Results

3.1. Overall retention on IOL and the effect of different modes of delivery

The data on overall retention on IOL reveal that overall completion rates are low across the seven courses: from 2.4% to 18.2%, depending on courses (Friðriksdóttir, 2017). Furthermore, when studying the effect of different modes of delivery on retention in two of the courses (IOL 1 and 2), the blended learning mode is the most effective in keeping learners in both courses. Table 1 shows the effects of the three modes on retention on IOL 2.

Table 1. Course completion in different modes of delivery in IOL 2

	Open Self-directed Course	Distance Course	Blended Course
N of beginners in a course	3,462	62	281
N of completers in a course	152	3	40
Completion rates	4.4%	4.8%	14.2%

The blended learning mode, with 14.2% completion rates, is more effective in retaining students than both the distance mode (4.8% completion rates), and the open self-directed mode (4.4% completion rates). The completion rates on the three different modes of delivery on IOL 1 revealed similar findings.

3.2. Overall engagement patterns on IOL

The retention data were broken down to reveal when non-completers dropped out. Two of the courses (IOL 1 and 2) were examined specifically for this purpose. Figure 1 shows that the tracking data revealed a regular drop-out pattern across all modes of delivery among the learners who did not remain to the end of IOL 2, showing concentrations of drop-outs at specific junctures in the course and large drop-out rates initially, irrespective of modality. The drop-out pattern in IOL 1 revealed similar findings.

The drop-out patterns exposed in Figure 1 raise further questions on the overall online engagement patterns of non-completers. IOL 1 and 2 were first investigated by using different parameters for coverage of a course. Table 2 reveals quite a different pattern when the parameters for coverage of course content are re-evaluated; completion rates are about (1) two times higher in all the three modes

on IOL 2 when the parameters for course completions are modified from 100% coverage of course content to 90%, (2) three to five times higher in all modes when adjusted to 75% coverage, and (3) four to eight times higher in all modes when changed to 50% coverage of course content. The results show similar engagement patterns when data from IOL 1 are examined. The findings presented in [Table 2](#) reveal immense impact on retention when the parameters used to measure retention are adjusted.

Figure 1. Drop-out patterns across the three different modes of delivery in IOL 2

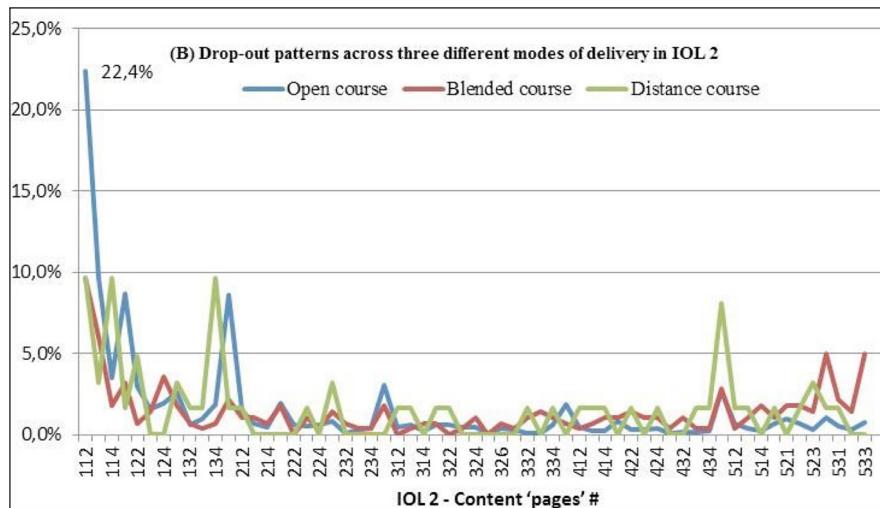
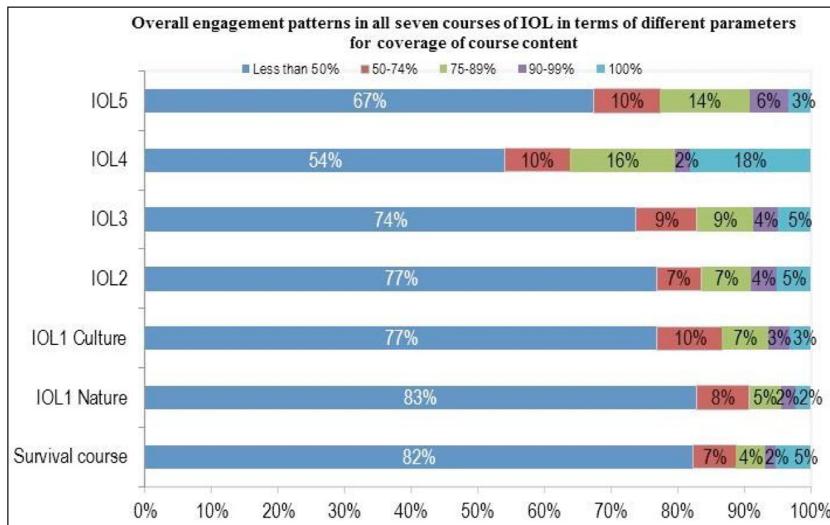


Table 2. Retention in view of different coverage of course content in different modes of delivery in IOL 2

		Content coverage 100%	Content coverage 90%	Content coverage 75%	Content coverage 50%
Blended Course	Completion rates	14.2%	29.2%	40.6%	53.4%
Distance Course	Completion rates	4.8%	6.5%	25.8%	40.3%
Open Course	Completion rates	4.4%	7.3%	14.2%	20.4%

These findings raise further questions on student engagement patterns on all the IOL courses. They were analysed further for a more nuanced picture of the overall engagement patterns. [Figure 2](#) exposes the patterns on all seven IOL courses showing that the majority of learners on IOL complete less than 50% of a course's content.

Figure 2. Overall engagement patterns in all seven courses of IOL in terms of different parameters for coverage of course content



4. Discussion

The results of the tracking data analysis support findings of previous studies on overall low completion rates in online courses (Gaebel, 2013) and that blended learning is most effective in retaining students (Harker & Koutsantoni, 2005). These findings reveal regular attrition patterns across all modes of delivery, with sharp drop-outs initially and concentrations of drop-outs at certain junctures in the courses, and that once parameters for measuring retention are adjusted, a different picture of retention is revealed. The findings give reason to ask what it really means to 'complete a course'.

5. Conclusions

The analysis of IOL's tracking data revealed interesting engagement patterns across courses and calls for a re-evaluation of how retention is measured in MOOCs. The next two phases of this study will gather self-reports from the same tracked students on their use of IOL to gain a deeper understanding of why online learners decide to leave, or complete, a programme.

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